AUG D 2 2004 EXPERIENCE PRADE MARKET

Excerpts translations of JP57-106624

Title of the invention Anti-Viral Agent

Claims

- 1. An anti-viral agent which comprises polysaccharides and water-soluble lignin, as active ingredients, obtained from Gramineus plants.
- 2. The anti-viral agent according to claim 1, characterized in that said Gramineus plant is bagasse.

(omitted.)

Example 1

Water was added in an amount of 5 liters per kg of bagasse, to which crude enzyme mentioned below was added in a concentration of 0.1 to 0.5 % and the pH was adjusted to a range of from 4.2 to 6.2. Then, the temperature was set to a range of from 35 to 45 C to allow the enzyme reaction to proceed in the range of said temperature for 8 to 24 hours, whereby polysaccharides and water-soluble lignin in bagasse were extracted in water. The mixture was then filtered through a filter cloth to remove residuals and further filtered through a filter to remove minute residuals.

Subsequently, this aqueous solution was deproteinized by 10 % TCA (trichloroacetic acid) or the like, and a large excess of 95 % ethanol was added. The resulting precipitate was separated by centrifugation and was then dried by freeze-drying or the like to obtain an anti-viral agent of this invention.

The aforesaid crude enzyme was obtained as follows.

That is, Basidiomycetes of, for instance, a shiitake mushroom were cultured in a liquid medium and a filtrate of the culture was subjected to salting-out by ammonium sulfate or the like, dialyzed, and freeze-dried. The crude enzyme contains cellulase, lignase, glucanase, chitinase and the like.

Further, the agent obtained above was subjected to isolation

Translation of JP 57-106624 and identification steps as follows.

That is, the freeze-dried powder obtained above was dissolved in a small amount of water, and subjected to Sephadex G-25 column chromatography. 35 % ethanol was used as a solvent.

The results are as shown in Fig. 1. Anti-viral activity was observed only in fraction A according to a bio-assay.

Then, Fraction A was dissolved in a small amount of water, and subjected to DEAE cellulose column chromatography. Elution was performed in a step wise method with a pH 9.5 carbonate buffer and NaCl. The results are as shown in Fig. 2. The anti-viral activity was observed only in fractions 1 and 3 according to the bio-assay.

Then, it was confirmed by experiments that the substance of fraction 1 obtained above was polysaccharides with a molecular weight of 10,000 to 50,000 which showed no characteristic ultraviolet ray absorption, but a positive molisch reaction, a positive phenol-sulfuric acid reaction, and a negative ninhydrin reaction.

Further, it was confirmed by experiments that the substance of fraction 2 (this should have been fraction 3: comment in translation) was water-soluble polyphenol (water-soluble lignin) with a molecular weight of 50,000 to 100,000 which showed a positive phenol-sulfuric acid reaction, and a positive MAULE reaction.

The results above confirm that the active ingredients in the agent of this invention are polysaccharides and water-soluble lignin.

(Experiments 1, 2 and 3 omitted.)

Example 2

Water was added in an amount of 5 liters per kg of bagasse and heated to boil at 100 C for 3 to 10 hrs., whereby polysaccharides and water-soluble lignin in the bagasse were extracted in water. The mixture was then filtered through a filter cloth and the filtrate was subjected to centrifugation

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to remove residuals and obtain an extract liquid.

Then, this extract liquid was subjected to isolation and identification steps as described above. It was confirmed that polysaccharides and water-soluble lignin were contained in the extract liquid.

Further, the extract liquid obtained above was used in anti-viral experiment as in Example 1. An excellent anti-virus effect was confirmed.

(Example 3 omitted.)

Fig. 1

Fig. 1 illustrates fractions by Sephadex G-25 chromatography of the extract liquid.

Fig.2

Fig. 2 illustrates fractions by DEAE cellulose column chromatography of fraction A of Figure 1.

